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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,146	04/05/2001	Wallace J. Lewis	0065.00	3989
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USDA, ARS, OTT 5601 SUNNYSIDE AVE RM 4-1159 BELTSVILLE, MD 20705-5131			EXAMINER BEISNER, WILLIAM H	
			ART UNIT 1744	PAPER NUMBER

DATE MAILED: 09/02/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/826,146

Applicant(s)

LEWIS ET AL.

Examiner

William H. Beisner

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*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --***Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL.                  2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.
- 4) Claim(s) 1-23 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-9 and 11-23 is/are rejected.
- 7) Claim(s) 10 is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Disposition of Claims**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 05 April 2001 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.

- 4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_.  
5) Notice of Informal Patent Application (PTO-152)  
6) Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed 05 April 2001 has been considered and made of record.

### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 11-16, 19 and 20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 11-16, 19 and 20 are all claiming a living organism. The claims recite that the claimed organism is "trained". However, all of these claims are drawn to non-statutory subject matter because the subject matter of claims 11-16, 19 and 20 pertains to naturally occurring organisms. Whether or not the organism is trained does not patentably distinguish the naturally occurring organism. The claimed organisms are naturally occurring and have not been genetically altered in any manner. Note, training is a behavioral modification and does not alter the structure of the naturally occurring organism.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 11-20 are rejected under 35 U.S.C. 102(b) as being anticipated by any of Bitterman et al.(Journal of Comparative Psychology); Marfaing et al.(J. of Insect Physiology) or Manner et al.(Journal of Neuroscience).

With respect to claims 11-16, 19 and 20, all of the above references disclose the use of honeybees to detect the presence of an odor. These naturally occurring honeybees are the same as the organisms recited in claims 11-16, 19 and 20.

With respect to claims 17 and 18, all of the above references disclose conditioning the honeybees to be responsive to a chemical odor. The conditioning (training) process includes exposing the organism to both a target chemical (odor) and biological resource (food) during a conditioning process. The organism is removed from the biological resource (food) upon displaying a behavioral response (proboscis extension response). Also note that the trained organisms if somehow argued to be different from the naturally occurring organisms would be the same as those recited in claims 11-16, 19 and 20.

6. Claim 21 is rejected under 35 U.S.C. 102(b) as being anticipated by Wilson et al.(US 5,134,892).

The reference of Wilson et al. discloses a chemical detection system that includes a device (634, 635, 633) for introducing a sample of air into a detection chamber (617). The device includes sensors (610) for detecting a response by organisms within the chamber. The

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device includes data analysis system (639,624,623,620,621) operatively connect to the sensor.

With respect to the recited power source, the exhaust fan (633) of the air introduction means is considered to inherently include a power source.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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10. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al.(US 5,134,892) in view of Quattrone et al.(US 3,367,308).

The reference of Wilson et al. has been discussed above.

Claim 22 differs by reciting that the air introduction device includes a flow control valve and a meter.

The reference of Quattrone et al. discloses a system for exposing an organism to a desired air stream that includes the use of a valve (94) and flow meter (95).

In view of this teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the system of the primary reference of Wilson et al. with a valve and meter for the known and expected result of determining and/or controlling the flow of sample air provided to the detection housing.

11. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al.(US 5,134,892) in view of Sakano (US 4,969,417).

The reference of Wilson et al. has been discussed above.

Claim 23 differs by reciting that the sensor is an optical sensor system.

The reference of Sakano discloses that it is known in the art that a number of different sensor systems can be employed to detect the movement of an organism in a detection chamber (See column 3, lines 5-21). The reference discloses that use of optical sensors.

In view of this teaching, it would have been obvious to one of ordinary skill in the art to employ an optical sensor system in the system of the primary reference of Wilson et al. for the

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known and expected result of providing an alternative means recognized in the art to achieve the same result, detect the movement of a contained organism.

12. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of Bitterman et al.(Journal of Comparative Pyschology); Marfaing et al.(J. of Insect Physiology) or Manner et al.(Journal of Neuroscience) in view of Matsui (JP 61-083964).

The references of Bitterman et al., Marfaing et al. and Manner et al. have been discussed above.

While the references listed above disclose the training the organisms to be responsive to chemical odors and display of a behavioral response when exposed to the chemical odor, the reference is silent as to the system employed to exposed the organisms to the chemical and recording a response.

The reference of Matsui discloses a system that is known in the art for holding an organism that is responsive to chemical odors and is capable of detecting responses of the organisms to the chemicals provided in the holding chambers (See the entire reference, especially the English language abstract).

In view of this teaching, it would have been obvious to employ the organisms of the primary references in the system of the Matsui for the known and expected result of providing a system recognized in the art for holding and exposing an organism to a air stream and for detecting the response of the organism to the air stream.

Note the system of Matsui employs an electronic sensor (5a) and data analysis system (7, 8) and employs multiple chambers (5b) (See Figure 1).

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With respect to claim 7, line (6) meets the claim limitation of a divider with an opening (6a) that is located between an organism compartment (5b) and sample compartment (2). Also, note that the response of the organism can be visually recorded in addition to the use of electronic sensors.

***Allowable Subject Matter***

13. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter:  
Claim 10 would be allowable because the prior art of record fails to teach or fairly suggest the claimed compartment divider that includes a sensor for reporting the response of the organism to a chemical sample.

***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The reference of Biederman (US 4,022,054) is cited as prior art that pertains to an odor detection system that includes a contained organism.

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16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Beisner whose telephone number is 703-308-4006. The examiner can normally be reached on Tues. to Fri. and alt. Mon. from 6:40am to 4:10pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Warden can be reached on 703-308-2920. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



William H. Beisner  
Primary Examiner  
Art Unit 1744

WHB